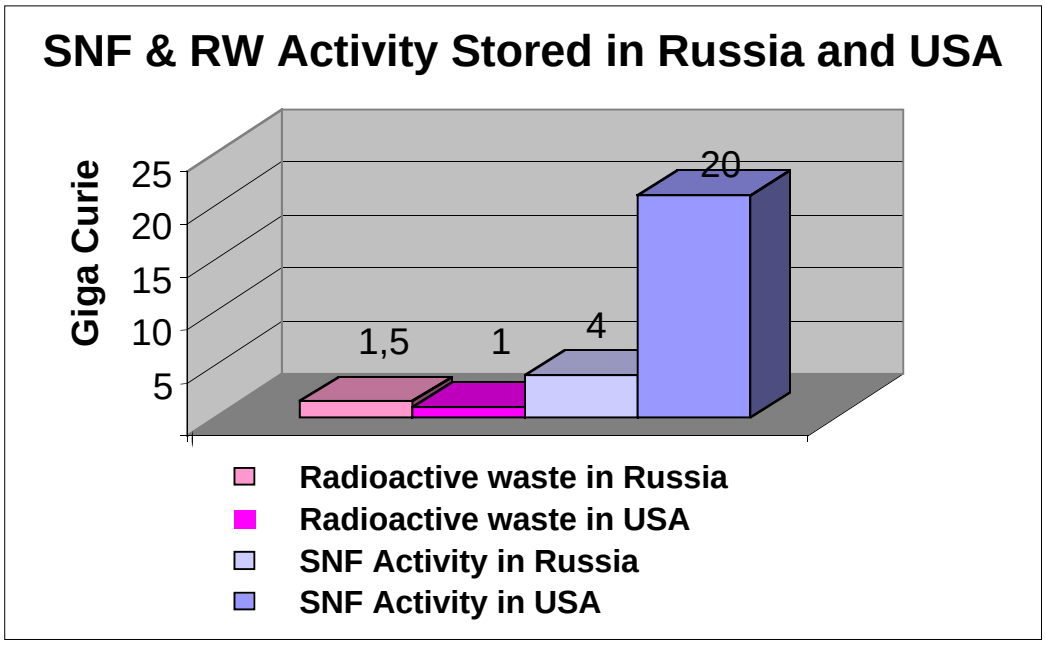
CURRENT STATUS AND PROSPECTS FOR ACCEPTANCE IN RUSSIA OF SPENT NUCLEAR FUEL AND RADIOACTIVE WASTE

1. BACKGROUND



SNF and RW management - key challenge in world nuclear power development and non-proliferation issues.

Country's Strategies of SNF and RW management

Country status	Strategy
Nuclear Club	**To develop SNF and RW management and promote strict non-proliferation control worldwide**
Non nuclear with NPP	**To develop nuclear industry not to be engaged in SNF and RW management**
Non-proliferation breakers	**To get access to nuclear technologies involving SNF and RW management to use them in nuclear weapons production**

CREATION OF A NUMBER OF INTERNATIONAL TECHNOLOGICAL CENTERS

2. OBJECTIVE

- **Reduce concern of nuclear industry future**
- **Ensure non-proliferation**
- **Increase attractiveness for nuclear industry**
- **Convert personnel and enterprises to civil activities**

3. REQUIREMENTS FOR THE CENTERS

- **Regional retrievable SNF storage well protected against terrorists.**
- **Acceptable geophysical, hydrology and seismic characteristics**
- **Developed infrastructure and trained personnel**
- **Pu utilization facility (MOX-fuel)**
- **Possibility of rendering services for SNF and RW management**
- **Nuclear reactor for burning out of high active long-lived nuclides in industrial scale.**
- **Installation for SNF industrial reprocessing and deep fractionation**

4. GENERAL ACTION PLAN

- **Retrievable storage facility for SNF for 40 – 50 years.**
  - **to make study and testing new SNF and RW management technologies**
  - **to accept foreign SNF and RW on commercial base**
  - **to fund safe technologies development internal SNF and RW management**

- **Industrial storage facilities for high-level waste**
- **Installations for transmutation and waste compacting**
- **Advanced storage facilities for low-level waste**
- **SNF reprocessing plants**
- **MOX-fuel production plants**

5. TECHNOLOGICAL INITIATIVE

RRC "Kurchatov Institute" suggestion:

First International Center to be built in Russia on Mining-and-Chemical Combine (**"Krasnoyarsk-26").**

Mining-and-Chemical-Combine-based SNF and RW management **Center will meet the total range of criteria** specified

FIRST INTERNATIONAL CENTER IN RUSSIA MINING-AND-CHEMICAL COMBINE ("KRASNOYARSK-26")

Requirements to Center	Krasnoyarsk-26 Features	
♦ Regional retrievable SNF storage well protected against terrorists.	-"Wet" storage 6000 ton -"Dry" storage 30000 ton (has been designed)	√
♦ Acceptable geophysical, hydrology and seismic characteristics	Unique granite rock mass	√
♦ Developed infrastructure and trained personnel	Personnel and infrastructure, including underground industrial premises	√
♦ Pu utilization facility (MOX-fuel)	MOX-fuel plant is under designing	√
♦ Possibility of rendering services for SNF and RW management	Readiness to accept SNF for storage	√
♦ Nuclear reactor for burning out of high active long-lived nuclides in industrial scale.	Construction of the nuclear reactor is possible	
♦ Installation for SNF industrial reprocessing and deep fractionation	Uncompleted plant RT-2 with capacity 3000 tons per year.	√

7. LEGAL BASE

- Fulfillment of initiative needs **changes in the legislation**.
- Bill on assurance of **"Russia's Radiation Purity"** is working out.
- The bill will include **financial backing**
- If adopted, the law shall set up a **firm legal base** for the project
- Newly elected State Duma deputies **have affirmative approach to the law modification**

8. INTERNATIONAL COOPERATION

Creation of SNF and RW management Centers will build up **confidence** and tune **public opinion toward nuclear power**.

Important is to create Centers in the **countries leading in nuclear power and nuclear fuel cycle**.

The creation of SNF and RW management Centers network should be grounded on **confidence** among the nuclear power countries and **nuclear & radioactive materials records and control**.

MONITORED RETRIEVABLE SPENT FUEL STORAGE & INTERNATIONAL TECHNOLOGICAL CENTERS IN KRASNOYARSK-26

ADVANTAGES FOR RUSSIA AND WORLD COMMUNITY

- **-Conversion of military facilities in Krasnoyarsk-26 "nuclear city".**
  -Reduction of "brain drain" in nuclear industry.
  -Relaxation of social tension in the region.

- **-Reduction of threat of nuclear and radioactive terrorism.**
  -Strengthening of non-proliferation control:
  -Storage would be out of reach of terrorists
  -Elimination of larceny risk during Pu transportation

- **Contribution to peaceful development of nuclear power**

- **Receipt of SNF form different countries for controlled storage and study.**

- **Working out advanced technologies for storage, processing and burying of SNF.**

- **Reduced cost due to utilization of infrastructure**

- **Favorable public opinion and international nuclear legislation**